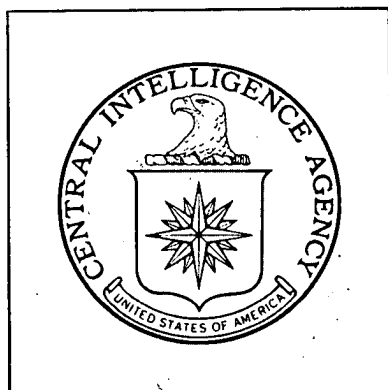


Top Secret



**DIRECTORATE OF
INTELLIGENCE**

**Industrial Facilities
(Non-Military)**

Basic Imagery Interpretation Report

Aluminum Production Facilities

China

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RCS 13/0197/69

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DATE JUNE 1969

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
Imagery Analysis Service

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INSTALLATION OR ACTIVITY NAME				COUNTRY	
Aluminum Production Facilities				CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		BE NUMBER	COMIREX NO.	WAC PIC No. 25X1
See Table	See Table		See Table	See Table	See Table
MAP REFERENCE					
See References					
LATEST IMAGERY USED			NEGATION DATE (If required)		
See References			Not Required		

Installation	UTM Coordinates	Geographic Coordinates	WAC-PIC No. 25X1
Fu-shun Alumina and Aluminum Plant	51TWG675315	41-50-14N 123-48-39E	0290-36-F3
Ho-fei Aluminum Plant	50RNL253353	31-57-05N 117-16-05E	0493-12-A
Jung-yang Alumina and Aluminum Plant	49SGJ075556	34-48-52N 113-16-12E	0385-37
Kuei-yang Alumina and Aluminum Plant NW	48RXE630530	26-41-20N 106-38-10E	0496-10-H
Lan-chi Aluminum Plant	50RQH350363	29-13-55N 119-25-01E	0493-78
Lan-chou Aluminum Plant (Hsi-ku)	48SUQ740990	36-07-41N 103-35-26E	0383-3-Z
Pao-tou Aluminum Plant	49TDQ283912	40-34-00N 110-09-00E	0288-13-P
Tzu-po Alumina and Aluminum Plant	50SNR940682	36-45-02N 118-03-10E	0381-4A, 4A1

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FIGURE 1. LOCATION MAP

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ABSTRACT

This report presents detailed photographic studies of eight selected aluminum plants in China. The plants at Fu-shun, Pao-tou, and Tzu-po were complete and operating when first observed on photography in 1962-63. The plant at Lan-chou appeared complete in 1962, but was not seen in operation until mid-1967. All four of these plants were operating when most recently observed on photography in 1968 and 1969.

The plants at Ho-fei, Kuei-yang, and Lan-chi were partially constructed when first seen in 1962-63, but they had not been completed when last observed in 1968 and early 1969. Most of the production facilities at the Jung-yang plant appeared complete in early 1962, but have never been seen operating.

The report identifies all major structures and provides dimensions for the main production buildings at these plants. Also included are basic descriptions of the facilities and an indication of the level of production activity at the operating plants since last studied in detail on late 1966 photography.

INTRODUCTION

Information relative to location, environment, and related installations is included with the individual descriptions of the plants.

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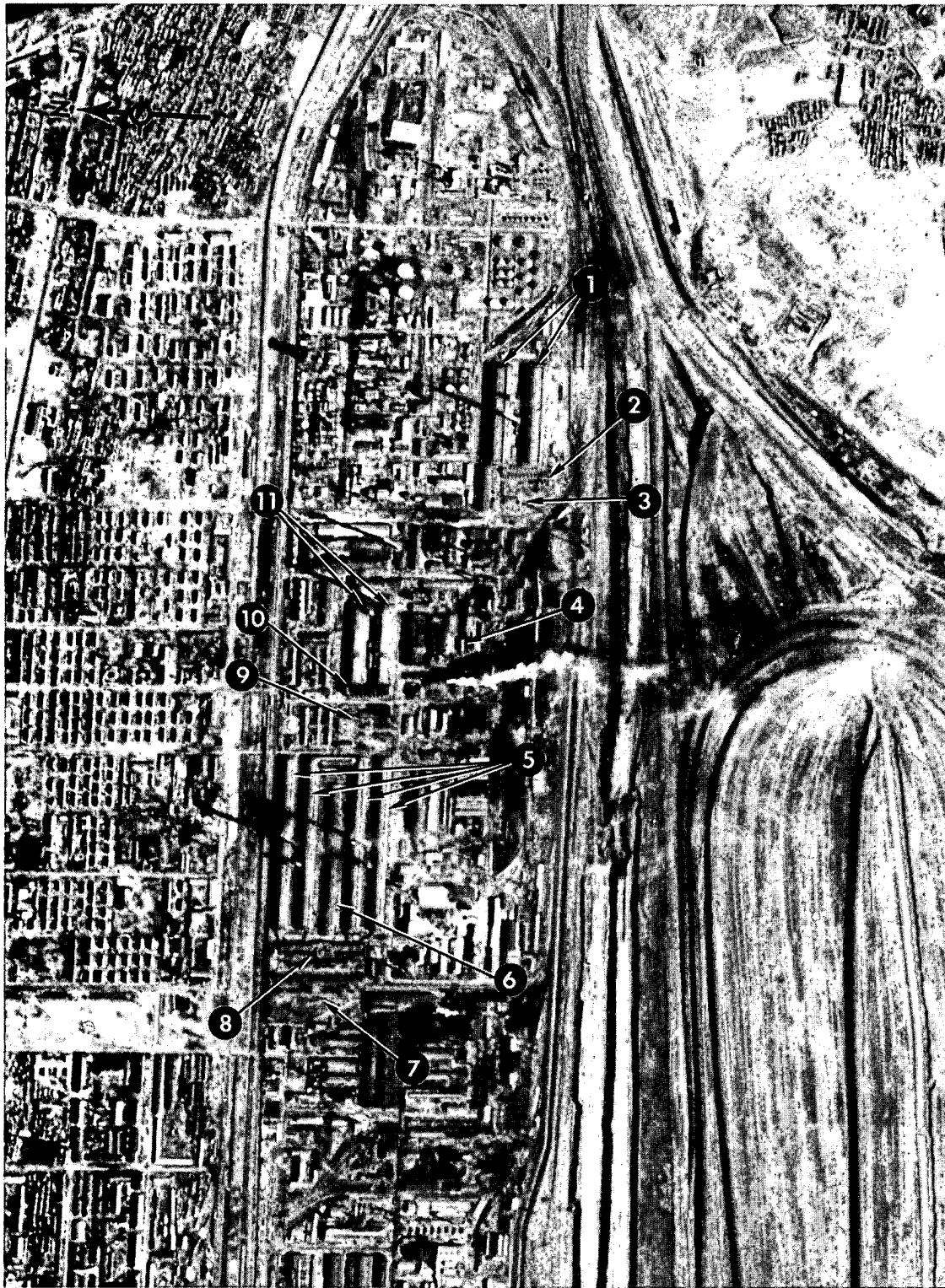


FIGURE 2. FU-SHUN ALUMINA AND ALUMINUM PLANT.

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FU-SHUN ALUMINA AND ALUMINUM PLANT

BASIC DESCRIPTION

The Fu-shun Alumina and Aluminum Plant is located about 4 nautical miles (nm) west-southwest of Fu-shun, China. The plant is bordered on the east by the Fu-shun Coal Liquefaction Plant [] and on the west by the Fu-shun Steel Plant []. The facilities are secured by a fence and occupy an irregular-shaped area measuring about 3,900 by 1,900 feet. The plant is both road and rail served.

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All of the main production facilities were complete and operational when first observed in mid-1962, except for the two potrooms (Item 1) located in the eastern section of the plant. These two potrooms were under construction in mid-1962 and were first observed complete and operational on late 1964 photography. There have been no apparent changes since that time.

The eight potrooms appeared to be in operation from late 1964 through late 1966. 1/2/3/ Smoke was visible emanating from the potroom stacks on photography of November 1967, February and August 1968 and April 1969, indicating the plant was also in operation in the late 1967 - early 1969 period.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Potrooms (2)	690 x 165
2	Rectifier Building	360 x 45
3	Transformer Yard	-
4	Alumina Plant	-
5	Potrooms (4)	1,150 x 75
6	Casting Building	Irregular
7	Transformer Yard	-
8	Rectifier Building	650 x 45
9	Transformer Yard	-
10	Rectifier Building	280 x 45
11	Potrooms (2)	550 x 130

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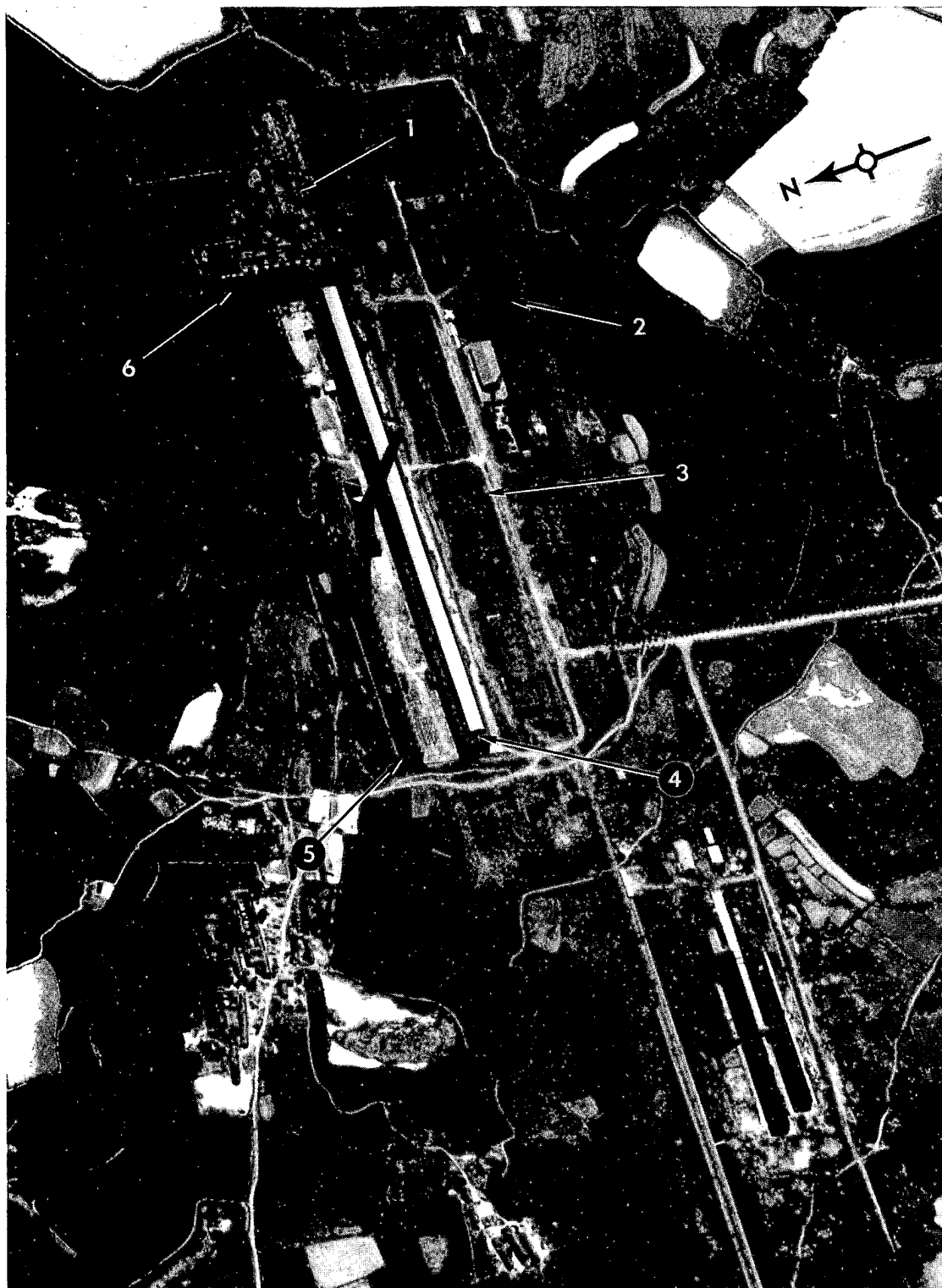


FIGURE 3. HO-FEI ALUMINUM PLANT, 19

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HO-FEI ALUMINUM PLANT

BASIC DESCRIPTION

The Ho-fei Aluminum Plant is located about 5 nm north of Ho-fei, China. The plant occupies a rectangular-shaped area measuring about 1,700 by 825 feet. The plant is road served and has no visible security.

When the plant was first observed in mid-1963, one potroom, a rectifier building and a large warehouse had been completed. However, the plant appeared inactive. There have been no apparent changes in the plant from mid-1963 through January 1968. The plant remains incomplete and has never been seen in operation. 1/2/3/

Key To Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Transformer Yard	-
2	Possible Carbon Paste Plant	-
3	Warehouse	370 x 90
4	Potroom	1,150 x 80
5	Potroom U/C	1,150 x 80
6	Rectifier Building	275 x 70

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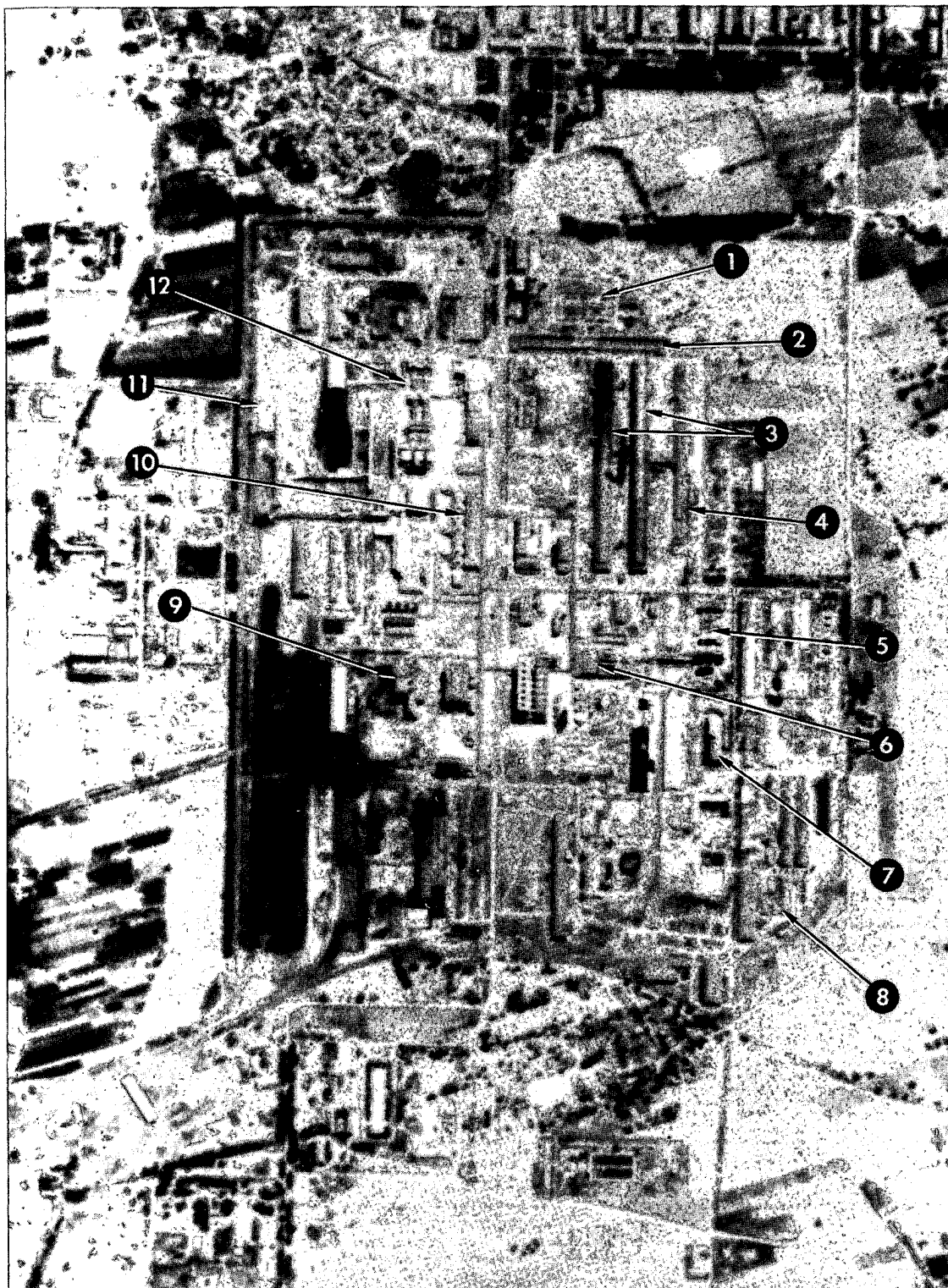


FIGURE 4. JUNG-YANG ALUMINA AND ALUMINUM PLANT,

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JUNG-YANG ALUMINA AND ALUMINUM PLANT

BASIC DESCRIPTION

The Jung-yang Alumina and Aluminum Plant is located about 19 nm west-northwest of Cheng-chou, China. The plant is secured by a fence and occupies an irregular-shaped area measuring about 4,000 by 3,200 feet. The facilities are both road and rail served.

Most of the major facilities for alumina and aluminum production were complete when first observed in early 1962 and there have been no apparent changes since that time. The facilities have never been observed in operation. 1/2/3/ The rectifier building (Item 2) appears designed to serve two additional potrooms; however, there is no construction activity apparent in the area. The steam plant appears to have been operational at one time, as evidenced by the presence of coal, but no smoke has ever been seen emanating from the stack.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Transformer Yard	-
2	Rectifier Building	750 x 75
3	Potrooms (2)	1,180 x 80
4	Casting Building	1,000 x 45
5	Calcining Kilns (2)	
6	Filter Building	145 x 85
7	Producer Gas Plant	Irregular
8	Carbon Paste Plant	Irregular
9	Steam Plant	-
10	Filter Building	240 x 50
11	Red Mud Basins	-
12	Sintering Kilns	300 x 15

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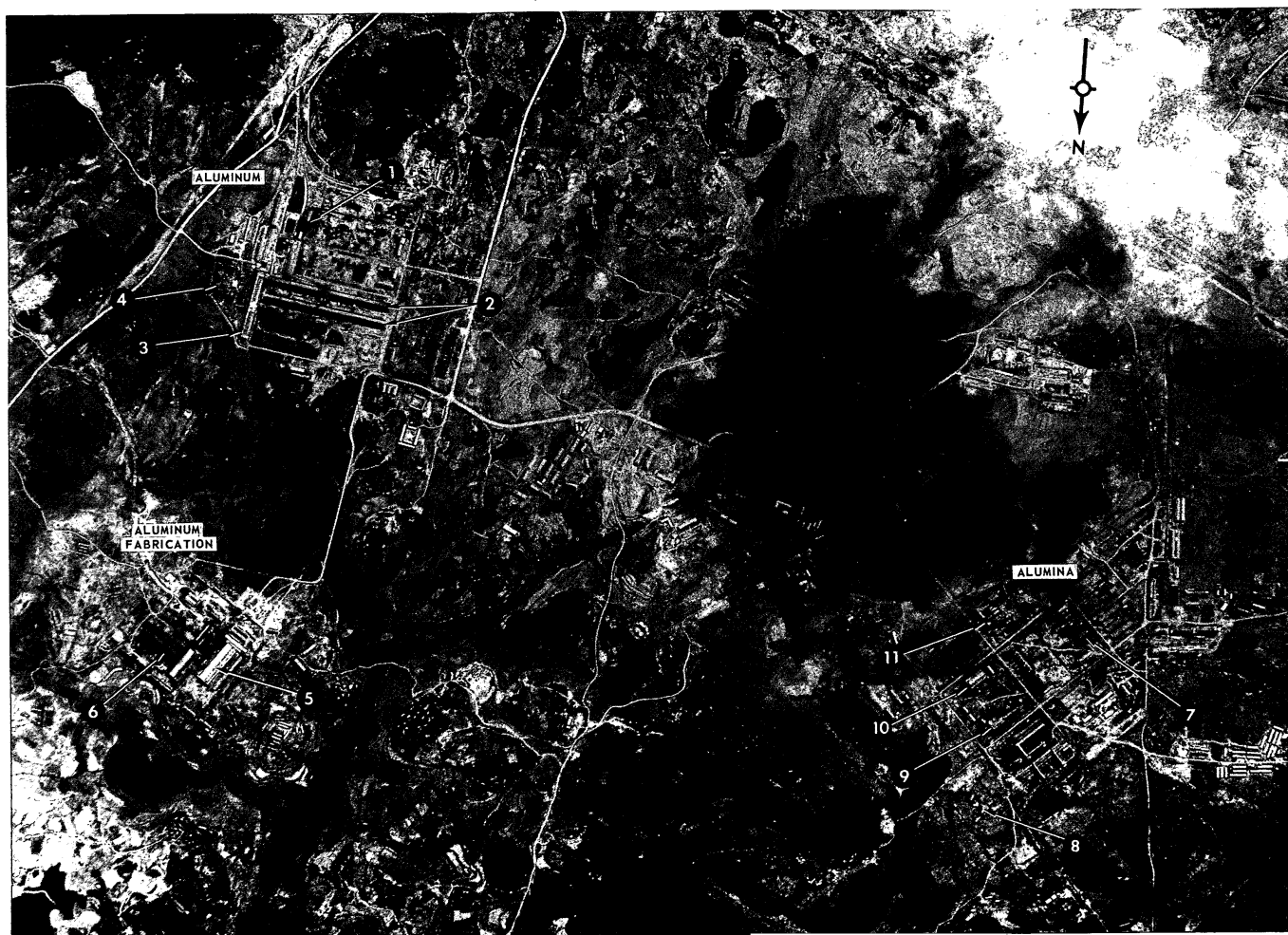


FIGURE 5. KUEI-YANG ALUMINA AND ALUMINUM PLANT NW,

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KUEI-YANG ALUMINA AND ALUMINUM PLANT NW

BASIC DESCRIPTION

The Kuei-yang Alumina and Aluminum Plant NW is located about 5 nm north-northwest of Kuei-yang, China. The plant is separated into three areas consisting of alumina, aluminum, and aluminum fabrication facilities. The alumina and aluminum facilities are both road and rail served and the fabrication facility is only road served. There are no visible signs of security measures at any of the three areas.

The plant was first observed in an early stage of construction on late 1962 photography. No apparent changes were made through late 1965. Between late 1965 and late 1966 the aluminum facility underwent considerable expansion. The two potrooms were completed, a transformer yard installed, and numerous support buildings were added. However, during this period there were no changes in the construction status of either the alumina production or the aluminum fabrication facilities. There was no additional construction activity observed in any of the three areas from September 1966 through March 1969. These facilities have never been seen in operation. 1/2/3/

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Steam Plant	-
2	Potrooms (2)	1,320 x 80
3	Rectifier Building	720 x 70
4	Transformer Yard	-
5	Rolling Mill U/C	-
6	Rolling Mill	550 x 120 330 x 70
7	Probable Calcining Kilns U/C	-
8	Probable Sintering Kilns U/C	-
9	Autoclave Building	320 x 60
10	Filter Building	200 x 120
11	Steam Plant U/C	-

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FIGURE 6. LAN-CHI ALUMINUM PLANT,

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LAN-CHI ALUMINUM PLANT

BASIC DESCRIPTION

The Lan-chi Aluminum Plant is located about 2.5 nm northwest of Lan-chi, China. The existing facilities occupy a rectangular-shaped area measuring about 1,600 by 600 feet. The plant is road and rail served and has no apparent security.

One potroom and a rectifier building appeared complete when the plant was first observed in mid-1962. There have been no apparent changes to the plant facilities since that time. The plant was never completed and it has never been seen in operation. 1/2/3/

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Rectifier Building	400 x 70
2	Support Building U/C	-
3	Potroom	1,220 x 80

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LAN-CHOU ALUMINUM PLANT (HSI-KU)

BASIC DESCRIPTION

The Lan-chou Aluminum Plant is located along the southeastern bank of the Yellow River in the western section of Lan-chou, China. The plant is secured by a fence and occupies an area measuring about 2,000 by 600 feet. The facilities are both road and rail served.

The main production facilities were complete when first observed in mid-1962 and only minor changes have occurred since that time. A small support building was added between mid-1966 and mid-1967.

The two potrooms were first observed in operation in mid-1967 and were operating on December 1967 and June and December 1968 photography as evidenced by smoke emanating from the potroom stack. 1/2/3/

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Carbon Paste Plant	Irregular
2	Rectifier Building	310 x 70
3	Transformer Yard	-
4	Casting Building	Irregular
5	Warehouse	210 x 125
		300 x 60
6	Potrooms (2)	1,250 x 80

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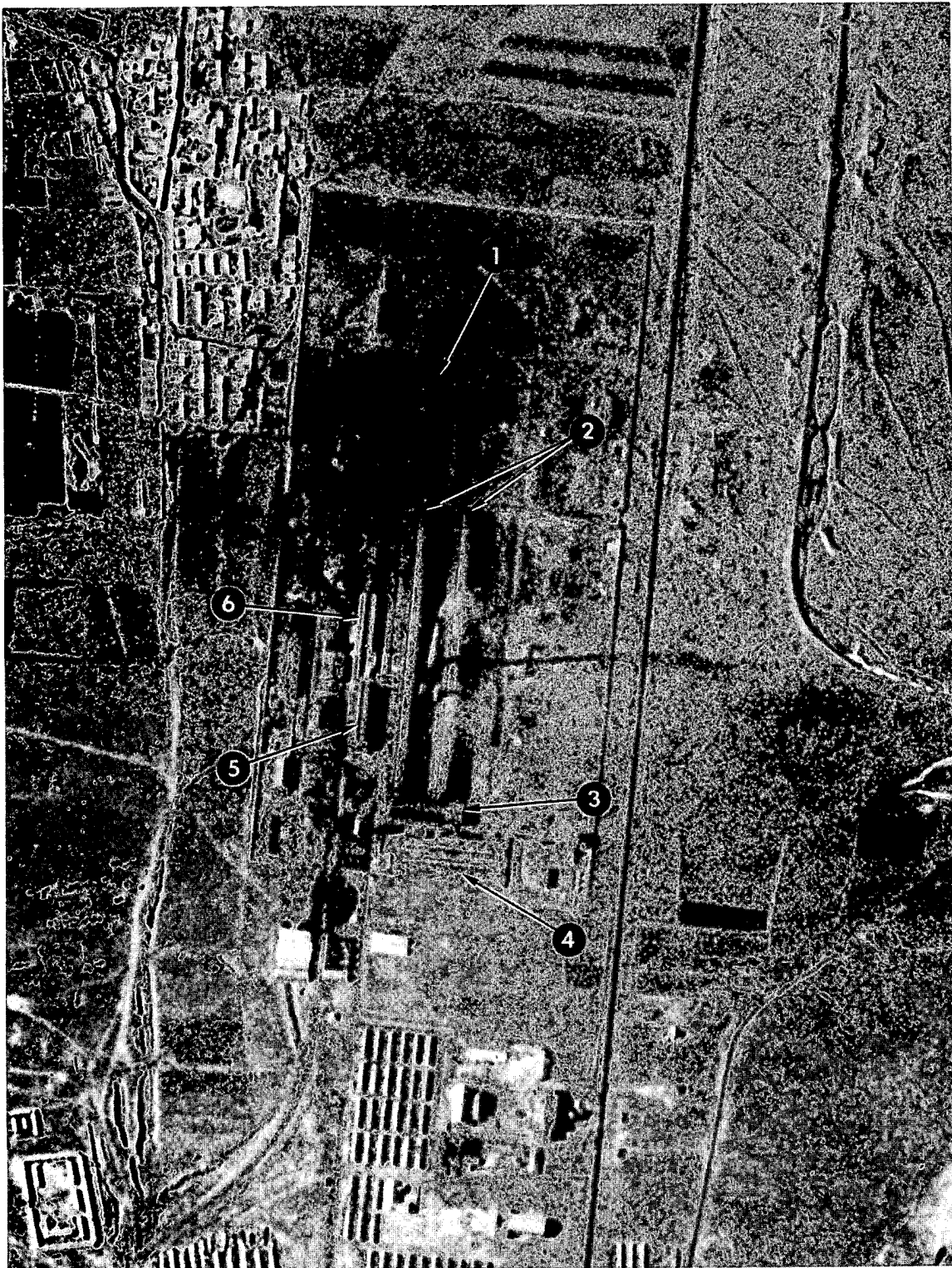


FIGURE 8. PAO-TOU ALUMINUM PLANT,

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PAO-TOU ALUMINUM PLANT

BASIC DESCRIPTION

The Pao-tou Aluminum Plant is located about 5.5 nm east of Pao-tou, China. The plant is secured by a fence and occupies a rectangular-shaped area measuring about 2,600 by 1,300 feet. The plant is both road and rail served.

The main production facilities were complete and operational when first observed in early 1963. Some minor support buildings were added between early 1963 and late 1965, but there have been no apparent changes since that time.

Both potrooms appeared to be in operation on photography from early 1963 through mid-1967. 1/2/3/ Smoke emanating from the potroom stack on photography of February and November 1968 and February 1969 indicates the plant was also operating during 1968 and early 1969.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Carbon Paste Plant	-
2	Potrooms (2)	1,200 x 75
3	Rectifier Building	300 x 65
4	Transformer Yard	-
5	Casting Building	275 x 100
6	Warehouse	375 x 100

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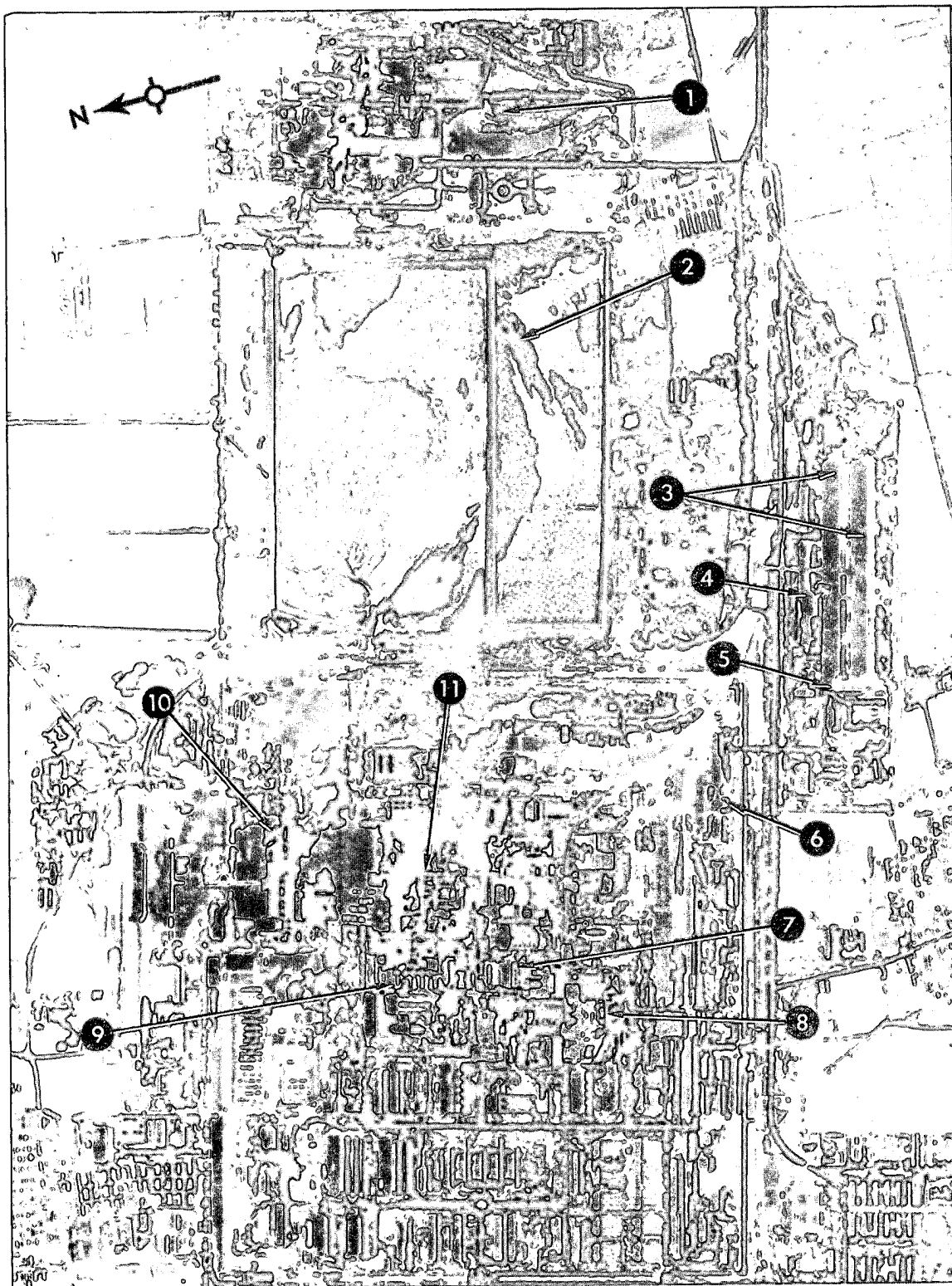


FIGURE 9. TZU-PO ALUMINA AND ALUMINUM PLANT,

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TZU-PO ALUMINA AND ALUMINUM PLANT

BASIC DESCRIPTION

The Tzu-po Alumina and Aluminum Plant is located about 3 nm south of Tzu-po (Chang-tien), China. The plant is divided into two separate areas, one for alumina and the other for aluminum production. The alumina facilities, including the red mud basins, occupy an area measuring about 5,500 by 3,100 feet, and the aluminum facilities occupy an area of about 2,400 by 650 feet. Each area is separately secured by walls and is served by road and rail. Both the Tzu-po Heat and Thermal Power Plant (Nan-tinn) [redacted] and the Tzu-po Cement Plant (Nan-ting) [redacted] are collocated with the alumina and aluminum facilities. The power plant supplies the great quantity of electrical power needed to operate the alumina and aluminum facilities, and the cement plant utilizes the waste from the aluminate ores to produce high-quality cement.

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The main production facilities for the alumina and aluminum were complete and operational when first observed in late 1962, and there has been no new construction since that time. Both areas appeared to be in operation on photography from late 1962 through early 1967. 3/4/ Smoke emanating from stacks on January, September and November 1968 indicates the plant was also in operation during 1968.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (Ft)</u>
1	Cement Plant	-
2	Red Mud Basins	-
3	Potrooms (2)	1,230 x 75
4	Casting Building	Irregular
5	Rectifier Building	290 x 70
6	Carbon Paste Plant	-
7	Autoclave Building	Irregular
8	Calcining Kilns (4)	190 x 13
9	Filter Building	Irregular
10	Thermal Power Plant	-
11	Sintering Kilns (5)	[redacted]

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REFERENCES

Fu-shun Alumina and Aluminum Plant

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Map

US Air Target Chart Series 200, Sheet M0290-11HL, 4th edition,
Jan 65, Scale 1:200,000 (SECRET

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Ho-fei Aluminum Plant

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Map

2nd RTS. US Air Target Chart Series 200, Sheet M0493-3HL, 3rd edition
Apr 68, Scale 1:200,000 (SECRET

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Jung-yang Alumina and Aluminum Plant

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Map

AMS. Series L500, Sheet NI49-8, 1st edition, June 61, Scale 1:250,000
(UNCLASSIFIED)

Kuei-yang Alumina and Aluminum Plant NW

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Map

15th RTS. US Air Target Chart Series 200, Sheet M0496-10HL, 2nd edition,
Oct 65, Scale 1:200,000 (SECRET)

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Lan-chi Aluminum Plant

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Map

2nd RTS. US Air Target Chart Series 200, Sheet M0493-20HL, 3rd edition,
Jan 68, Scale 1:200,000 (SECRET)

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Lan-chou Aluminum Plant (Hsi-ku)

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Map

15th RTS. US Air Target Chart Series 200, Sheet 0383-22HL, 2nd edition,
May 64, Scale 1:200,000 (SECRET/CONTROLLED DISSEM)

Pao-tou Aluminum Plant

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Map

15th RTS. US Air Target Chart Series 200, Sheet 0288-22HL, 2nd edition,
Nov 64, Scale 1:200,000 (SECRET

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Tzu-po Alumina and Aluminum Plant

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Tzu-po Alumina and Aluminum Plant (Continued)

Map

548th RTS. US Air Target Chart Series 200, Sheet M0381-22HL, 4th edition,
Jul 68, Scale 1:200,000 (SECRET [REDACTED])

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DOCUMENTS

1. CIA. PIR 65071. Status of Aluminum Plants in Communist China,
[REDACTED] December 1965 (TOP SECRET RUFF)
2. CIA. PIR 75069, Status of Aluminum Plants in Communist China
During 1966, [REDACTED] December 1966 (TOP SECRET RUFF)
3. CIA. IAS 318/67, Status of Communist China's Aluminum Plants
During 1967, [REDACTED] 19 December 1967, (TOP SECRET RUFF)
4. CIA. IAR 85022. Chang-tien Alumina and Aluminum Plants, China,
[REDACTED] October 1967, (TOP SECRET RUFF)

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